NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

F A C T S H E E T

(Pursuant to NAC 445A.236)

FMC Battle Mountain – NEV89048

August 2004

PERMITTEE NAME: FMC Corporation

PERMIT NUMBER: NEV89048 - Renewal

LOCATION: Approximately 6 miles northeast of Battle Mountain
Lander County, Nevada

Latitude: 40° 42' 14" North
Longitude: 116° 53' 14" West
Section 27, Township 32 North, Range 45 East, M.D.B.&M.

PUBLIC WATER SUPPLY: Not within a well protection zone

FLOW: 144,000 gallons per day – 30 Day Average
144,000 gallons per day – Daily Maximum

GENERAL:

The FMC Battle Mountain Distribution Center operated as a trans-loading facility handling sodium cyanide and hydrogen peroxide until late 2003/early 2004. During operation, the facility received bulk shipments of reagent material by rail tank car, which would be off-loaded into tanker trailers for commercial distribution or direct transfer into product storage tanks. Because facility activities are suspended, notification regarding resumed operations and the nature of activities conducted on site is a requirement in the proposed permit renewal to confirm relevance and adequacy of stipulated parameters and conditions.

Off-loading activities were conducted in areas secured with secondary containment. Secondary containment areas are designed to divert fugitive liquids into a scrap water tank which is pumped directly into the product storage tank and used as commercial product.

While the facility has discontinued operation, FMC elects to maintain the existing permit authorizing discharge from an oil-water separator (OWS) associated with a truck wash facility (Outfall 001) and the on-site septic system (Outfall 002). A separate paved pad for truck wash activities contains and collects wash and rinse water for diversion through a liquid-solid separator and an oil-water separator prior to discharge to an unlined ditch that irrigates trees. The ditch terminates at an abandoned gravel pit, however, discharge water either percolates or evaporates before intercepting the pit unless swollen by additional precipitation.

The septic system discharges sanitary wastes and deionization (DI) resin filter backwash to groundwater through a leach field system. DI resin filter backwash is discharged intermittently, as necessary, at a maximum of 5 gallons per minute (gpm). The septic system is estimated to have a design capacity of approximately 5,000 gallons.

DISCHARGE CHARACTERISTICS

Product transfers occur within areas secured with secondary containment designed to divert fluids back into a scrap storage tank for reuse. While both sodium cyanide and hydrogen peroxide are commonly considered hazardous materials in liquid or concentrated form, residual concentrations of either of these compounds are

relatively innocuous and highly degradable in the presence of ultraviolet light. During the operation of the trans-loading facility through late 2003, detectable concentrations of weak acid dissociable (WAD) cyanide at the discharge of the oil-water separator were not reported. Dissociated cyanide rapidly degrades into basic elemental daughter compounds when exposed to sunlight, and hydrogen peroxide rapidly reduces to water when in contact with organic material or when exposed to ultraviolet light.

Expectations that either of these compounds, or constituents of these compounds, may be observed in the discharge from the oil-water separator are not substantiated. Total petroleum hydrocarbon (TPH) and WAD cyanide concentrations at the discharge of the oil-water separator have been consistently less than the permitted limitations of 15 and 0.20 milligrams per liter (mg/L), respectively.

In addition to sanitary wastes discharged through the septic system, deionization resin backwash also discharges through the septic tank and leachfield. WAD cyanide and pH are the only reported constituents routinely analyzed at the discharge of the septic system under the existing permit. WAD cyanide concentrations in excess of the 0.20 milligram per liter (mg/L) cyanide discharge limitation have not been reported, nor has the pH fluctuated outside of the permitted range of 6 to 9 standard units (SU). Total dissolved solids (TDS) concentrations are not required to be monitored at the discharge of the septic system, but are monitored at groundwater monitoring well locations.

RECEIVING WATER CHARACTERISTICS:

Receiving water for Outfall 001 and 002 discharges is groundwater of the State of Nevada. Groundwater in the vicinity of the discharges is characterized by monitoring wells MW-1 and MW-2, which are reportedly located upgradient of the facility (southeast corner), and downgradient of the oil-water separator, respectively.

Groundwater reportedly flows in a northwest direction, which locates the FMC property downgradient of a Sierra Chemical Company site. Groundwater is encountered at depths ranging between 15 and 25 feet below grade surface (bgs) at the well locations (elevation approximately 4490 feet above mean sea level). Analytical data on file indicates good water quality with nitrate as nitrogen (as N) concentrations less than 1.0 mg/L, TDS between 350 – 400 mg/L, and a neutral pH (7.6 to 7.7 SU). Concentrations of WAD cyanide or petroleum hydrocarbons were not detected. (Discharge Monitoring Report, second quarter 2002).

PROPOSED LIMITATIONS:

During the period beginning on the effective date of this permit and lasting until the permit expires, the Permittee is authorized to discharge treated truck and equipment wash water and sanitary wastewater and deionization resin backwash water from:

Outfall 001: Discharge from the oil-water separator to the irrigation ditch; and,
Outfall 002: Discharge from the septic system leach field to groundwater.

Effluent samples and/or measurements taken in compliance with the monitoring requirements specified below shall be collected at:

EFF 1: At the discharge from the oil-water separator prior to the unlined ditch; and,
EFF 2: At the discharge of the septic tank before the leachfield.

Authorized discharges shall be limited and monitored as follows:

EFFLUENT LIMITATIONS

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Maximum	Sample Location	Measurement Frequency	Sample Type
Flow Rate (gpd)	144,000	144,000	EFF 1	Continuous	Meter/Totalizer
Total Petroleum Hydrocarbons[1] (mg/L)	-----	15	EFF 1	Quarterly	Discrete
Volatile Organics[2] (mg/L)	-----	Monitor & Report	EFF 1	Annually[3]	Discrete
Total Cyanide (mg/L)	-----	0.20	EFF 2	Quarterly	Discrete
Total Dissolved Solids (mg/L)	-----	Monitor & Report	EFF 2	Quarterly	Discrete
pH (SU)	-----	6 to 10	EFF 2	Quarterly	Discrete

gpd: gallons per day
mg/L: milligrams per liter
SU: standard units

[1]: Environmental Protection Agency (EPA) Solid Waste (SW) 846 Method 8015 gasoline and diesel range hydrocarbons.
[2]: EPA SW846 Method 8260.
[3]: Conducted during 4th quarter and reported with 4th quarter monitoring results.

Inspections of the OWS for debris, sediment, and hydrocarbon content shall be conducted at least monthly and after storm events. Inspection, cleaning, and other maintenance activities must be documented in permanent records maintained at the facility and made available for review upon request by the Nevada Division of Environmental Protection Bureau of Water Pollution Control (Division).

The daily flow volume to any septic system cannot exceed the respective septic tank capacity. Septic tanks shall be pumped free of scum and sludge at a frequency no less than every two (2) years. All discharges to any septic system must comply with the requirements and conditions of the Unified Plumbing Code Section 714, which prohibits the discharge of specified materials and types of materials through septic systems.

Rationale:

Flow Rate: The flow rate is limited to the represented design capacity of the OWS.

Total Petroleum Hydrocarbons (Maximumn 18 pounds per day): This discrete monitoring parameter is required to periodically confirm proper operation and maintenance of the OWS system.

Volatile Organics: (Monitor & Report): This discrete monitoring parameter is required to periodically confirm the absence of unknown and/or unmitigated solvent compounds discharging from the OWS system.

Total Cyanide (less than 0.25 pounds per day): The limitation for total cyanide is based on the Primary Drinking Water Standard Maximum Contaminant Level (MCL) of 0.20 mg/L cyanide as free cyanide. Periodic monitoring for total cyanide is required to confirm good housekeeping practices within the administrative offices and changing areas. Because the septic system is not exposed to ultraviolet sunlight, cyanide may persist and migrate in subsurface environments if not identified in a timely manner. Total cyanide is the specified monitoring

parameter instead of WAD cyanide because sodium cyanide exhibits a solubility of only 58% at 77° Fahrenheit, in which case, cyanide in a solid sodium complex may remain undetected if quantified using the WAD cyanide analysis.

Total Dissolved Solids (Monitor & Report): Groundwater quality data indicates TDS concentrations at monitoring well locations less than 500 mg/L, which is the secondary water quality standard for drinking water. While the quality of this groundwater parameter appears to be sustainable despite the discharge of dionization resin backwash, confirmation of TDS load for long-term deduction of relative impact is appropriate.

pH (6 to 9 SU): Monitoring results confirming a relatively neutral pH provide an indication of the absence of materials such as sodium cyanide and/or hydrogen peroxide.

GROUNDWATER MONITORING:

Monitoring wells MW-1 and MW-2 shall be sampled for the presence of nitrogen compounds, total dissolved solids (TDS), chloride, cyanide, and pH. Measurements of electrical conductivity (EC), depth to groundwater, and groundwater elevation are also required. Samples shall be collected on a semi-annual basis and shall be monitored in accordance with permit conditions and defined sampling and analysis protocol included in the revised Operations and Maintenance (O&M), which must be submitted for approval by the Division.

Groundwater wells shall be monitored according to the following parameters:

Groundwater Monitoring Requirements

PARAMETER	REQUIREMENTS	SAMPLE LOCATION[1]	SAMPLE FREQUENCY[2]	SAMPLE TYPE
Depth to Groundwater (feet)	Monitor & Report	MW-1 & MW-2	Semi-Annually[3]	Field Measurement
Groundwater Elevation (feet above msl)	Monitor & Report	MW-1 & MW-2	Semi-Annually[3]	Calculate
Electrical Conductivity (μmhos or μSiemens/cm)	Monitor & Report	MW-1 & MW-2	Semi-Annually[3]	Discrete
Nitrate as N (mg/L)	10	MW-1 & MW-2	Semi-Annually[3]	Discrete
Total Nitrogen as N (mg/L)	Monitor & Report	MW-1 & MW-2	Semi-Annually[3]	Discrete
Chlorides (mg/L)	Monitor & Report	MW-1 & MW-2	Semi-Annually[3]	Discrete
Total Dissolved Solids (mg/L)	Monitor & Report	MW-1 & MW-2	Semi-Annually[3]	Discrete
Total Cyanide (mg/L)	0.20	MW-1 & MW-2	Semi-Annually[3]	Discrete
pH (SU)	6 to 9	MW-1 & MW-2	Semi-Annually[3]	Discrete

msl: mean sea level (above)
mg/L: milligram per liter
as N: as Nitrogen

[1]: Monitoring wells currently include: MW-1 and MW-2. All groundwater monitoring wells installed as a function of the permitted discharge shall be included in the monitoring program prescribed.

[2]: Sampling frequency may be modified or reduced, in whole or in part, at the discretion of the Division, upon demonstration of groundwater concentrations or conditions which warrant or justify alternative monitoring schedules.

[3]: Monitoring should be conducted in, and reported with data corresponding to, first and third quarters, annually.

- Wells shall be monitored in accordance with permit conditions and procedures described in the approved O&M Manual. Should site conditions and/or operational activities necessitate or warrant the installation of additional monitoring wells, all wells shall be incorporated into the required monitoring schedule. All subsequent monitoring wells proposed or required (designs and locations) shall be approved by the Division prior to installation and constructed in general accordance with "WTS-4: Monitoring Well Design Requirements" (NDEP, February 1997).

- If the nitrate as nitrogen (as N) concentrations measured in groundwater increase to:

  i. 7.0 mg/L, an alternate method of disposal, approved by the Division, shall be selected;

  ii. 9.0 mg/L, construction of the approved alternate site or facility must begin; and,

  iii. 10.0 mg/L, the discharge to groundwater must cease.

SCHEDULE OF COMPLIANCE:

The Permittee shall implement and comply with the provisions of the permit upon issuance and the following schedule of compliance, after approval by the Administrator, including in said implementation and compliance, any additions or modifications the Administrator may make in approving the schedule of compliance.

- **Upon issuance of the permit,** the Permittee shall achieve compliance with all discharge limitations;

- **Before facility operations are resumed either by FMC or any other operating entity,** the Permittee shall submit:

  a. Notice of pending operation with a detailed description of facility operations to confirm the relevance and applicability of existing permit conditions;

  b. Base-line groundwater monitoring data for the routine groundwater monitoring parameters specified, as well as additional analytes included on the Profile I analysis list (attached) and the suite of volatile organics quantified by EPA Method 8260; and,

  c. An updated Operations and Maintenance (O&M) Manual that includes, at a minimum, system/facility schematics, narrative capacity and operation specifications, a maintenance and cleaning schedule, inspection critieria, and procedures for compliance sampling. The O&M Manual shall also include a scaled site location map illustrating the location of the OWS system, the discharge ditch, the septic tank and leach field locations, and monitoring well locations relative to nearby roads, highways, or other common or identifiable landmarks.

PROPOSED DETERMINATION:

The Division has made the tentative determination to renew the proposed permit, under the provisions prescribed, for a 5-year period. Under NAC 445A.232, this permit is classified as a *Discharge from Remediation, Dewatering, other than a discharge to groundwater from the dewatering of a mine, or from a Power Plant, a Manufacturing or Food Processing Facility or any Other Commercial or Industrial Facility – 50,000 gallons or more but less than 250,000 gallons of process water daily.*

PROCEDURES FOR PUBLIC COMMENT:

Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada, subject to the conditions contained within the permit, is being sent to the **Battle Mountain Bugle** for publication. Notice is also mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the date of the public notice, and must be postmarked, faxed, or e-mailed by 5:00 p.m. on **October 8, 2004**. The comment period can be extended at the discretion of the Administrator. A public hearing on the proposed determination can be requested by the Applicant, any affected State, any affected interstate agency, the Regional Administrator, or any interested agency, person, or group of persons. The request must be filed within the comment period, and must indicate the interest of the person filing the request and the reason(s) why a hearing is warranted. Public hearings granted by the Division are conducted in accordance with NAC 445A.238. The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Tamara J. Pelham
August 30, 2004
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